REMARKS/ARGUMENTS

Applicant encloses herewith a Petition for a three month extension of time.

Claim 1 has been amended to include limitations from claim 28. Claim 28 has been cancelled. Claims 20-22 were previously cancelled. Claims 1-19, and 23-27 are currently pending.

Claims 1-19 and 23-28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Desurvire or Masuda et al when taken with Aida et al or Ma et al. The Action states at the bottom of page 2:

> Desurvire and Masuda et al disclose prior art optical transmission systems with plural optical processing nodes which comprise plural signal varying devices between the nodes (see, inter alia, pages 116-119 of Desurvire, and Fig. 1 of Masuda). Furthermore, Masuda discloses (page 73-74) the use of two Raman amplifiers in series, and the in series use of a doped fiber amplifier with a Raman amplifier.

The Action also states at the top of page 3;

> Aida et al and Ma et al teach the use of signal varying devices (inter alia, Raman and doped amplifiers, and their respective pumps) having different signal variation profiles. See, inter alia, Fig. 10 and pages 225 and 228 of Aida, and Fig. 1 of Ma et al. These systems are noted to provide greater bandwidth, increased gain, and increased repeater spacing.

The Action goes on to discuss the prior art, the differences between the art and the claimed invention, and other factors considered in rejecting the claims.

Claim 1 is the only independent claim and Claim 1 now includes the following limitations from claim 28 (which is now cancelled):

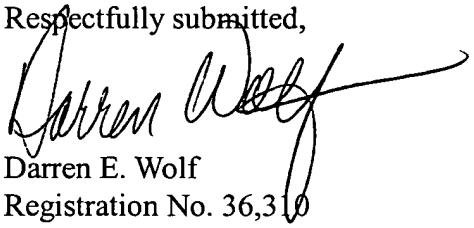
> . . . the optical fiber is configured to produce Raman gain in a signal wavelength range and provide concentrated amplification, attenuation, and lossless transmission in the optical fiber; and . . . the pump source is further configured to control the pump energy in at least one of the pump wavelengths to vary the signal variation profile and provide amplification, attenuation, and lossless transmission in the optical fiber over the signal wavelength range.

Applicant submits that the cited art fails to teach or suggest the optical transmission system as recited in claim 1, as amended. For example, Applicant submits that the cited art fails to teach a an optical transmission system including the plurality of optical processing nodes, the plurality of signal varying devices, the optical fiber configured to produce Raman gain and provide concentrated amplification, attenuation, and lossless transmission, and the pump source configured to control the pump energy of at least one of the pump wavelengths to vary the signal variation profile and provide amplification, attenuation, and lossless transmission in the optical fiber over the signal wavelength range, as recited in claim 1.

The system claimed in Claim 1 allows for improved control over signals and signal variation profiles in a manner which is neither taught nor suggested in the cited art, and Applicant submits that Claim 1 is patentable over that cited art. The remaining claims all depend, directly or indirectly, from Claim 1. Therefore, Applicant submits that the remaining claims are also patentable over the cited art.

Applicant submits that the application, as amended, is in condition for allowance. If the Examiner has any questions pertaining to this Amendment or to the subject application in general, the Examiner is encouraged to contact the undersigned.

Respectfully submitted,



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